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10/573,706	03/27/2006	Naoki Tomoguchi	062287	3538

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EXAMINER	
ORLANDO, MICHAEL N	
ART UNIT	PAPER NUMBER
1791	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/573,706	TOMOGUCHI ET AL.	
	Examiner	Art Unit	
	MICHAEL N. ORLANDO	1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 June 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7 and 9-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7 and 9-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The examiner acknowledges the arguments and amendments submitted June 24th, 2008 and hereby withdraws the 112 rejections as well as the claim objections. The merits of the claims, however, remain unpatentable over the prior art as set forth below.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-4, 6, 9-11 and 13-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Higashio et al. (US 2003/0072078 A1) in view of Rogers (US 2,263,249).

Regarding claims 1, 13 and 18 Higashio discloses a method of manufacturing a polarizing plate by laminating a transparent protective layer ([0008], [0044]) to a polarizing film (i.e. polarizer. The laminating method includes utilizing an adhesive interposed there between whereby the adhesive can be applied directly to the transparent film and/or the polarizer ([0055]). Higashio teaches that the adhesive layer thickness in general is in the range of 1-500μm ([0059]).

Higashio fails to disclose the use of an aqueous liquid, which comprises no adhesives on the adhering surface when the polarizer and transparent film layer are adhered. Higashio also fails to teach the specific adhesive thickness.

Rogers teaches a method for making a laminated light polarizer whereby a polyvinyl alcohol based adhesive is used and water is applied to the bonding surface for the purpose of insuring uniform contact between the polarizing film and a substrate (column 4, lines 40-45).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the invention of Higashio to include adding water to the bonding interface in view of Rogers because such was known insure uniform contact

between bonding surfaces, which would have served the purpose of providing for a clean, uniform seal between the two surfaces by limiting weak adhering locations and or appearance flaws which would have arisen with a non-uniform adherence. As to the thickness range Although Higashio fails to explicitly teach the range of less than 30-300nm the general concept of the adhesive layer is taught and it would have therefore been obvious to include the specific use of the thickness range of 30-300nm since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (*In re Aller,* 105 USPQ 233). Also, the adhesive is layer was being provided for adhesion and as such it would have been an obvious choice to modify the thickness as a factor of both the desired level of adhesion and subsequent cost considerations (i.e. it would have been obvious to use a thinner layer in order to reduce cost especially in cases where less adhesion was required). Also, the courts have upheld in the past that merely requiring a process to be continuous has been a matter of obviousness (In re Dilnot, 319 F.2d 188, 138 USPQ 248, CCPA 1963).

Regarding claim 2, Higashio teaches the polarizer as a polyvinyl alcohol (PVA) based film ([0042]) and the transparent protective film as cellulose-based ([0044]).

Regarding claim 3, Higashio teaches the polarizing film with applicable thicknesses in the range of 5-80μm, which clearly includes thicknesses less than 35μm.

Although Higashio fails to explicitly teach the range of less than 35μm the general concept of polarizers are taught, as is a thickness range that substantially overlaps the claimed range and it would have therefore been obvious to include the

specific use of the thickness range less than 35μm since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (*In re Aller,* 105 USPQ 233)

Regarding claim 4, Higashio teaches the use of a polyvinyl alcohol based adhesive ([0055]).

Regarding claim 6, Higashio teaches the use of cross-linking agents with the adhesive ([0061]).

Regarding claims 9 and 10, the invention disclosed in claim 1 uses water as the aqueous liquid, which inherently has a viscosity of around 1cP (≈ 1.002).

Regarding claim 11, the method of claim 1 is presented above, but Rogers who teaches the aqueous liquid fails to teach the cross linking agent alternatively dissolved therein; however, it can be seen from the presented teachings of Higashio (for example claim 6 above) that the use of cross linking agents was known and utilized with the presented invention.

It would have been obvious to one having ordinary skill in the art at the time of the invention to have utilized the cross-linking agent as disclosed by Higashio alternatively dissolved in the aqueous liquid of Rogers because general knowledge in the state the art of cross-linking agents would have provided that it was merely important to have the cross-linking agents and the adhesive mated at the time of curing and may have found the alternative more appealing in cases where the aqueous liquid was able to more easily dissolve the agent. The examiner, however, notes that the presentation of the cross linking agent dissolved in the aqueous solution does not seem

to yield any specific advantage over that presented in the teachings above whereby the agent is dissolved in the adhesive and subsequently mated with the aqueous solution at bonding (they all become mixed regardless).

Regarding claims 14-17, as presented in claim 1 above Higashio in view of Rogers teaches the use of water at the bonding interface before adherence in the production of a light polarizer. Rogers teaches that water may be added to the polyvinyl alcohol coating (i.e. the adhesive) or by soaking the PVOH film in an aqueous solution (column 3, lines 5-20). The above teaching present (as in the instant claim 17) that the aqueous liquid is present at the adhering surface just before the adhesion between the substrates.

Higashio in view of Rogers fails to explicitly teach the water being alternatively added to the film and or the transparent layer in addition to the teaching that the water may be added to the PVOH based adhesive at the interface.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized the water any location between the bonding surfaces because the important aspect of the invention presented above is that water be present at the interface to provide for uniform bonding and there is no indication that any of the effectiveness will be negated by manipulating the location so long as water contacts the adhesive at the point of adherence. Moreover it would have been further obvious to try the water at other locations within the interface with there being only a finite number of predictable solutions (add to the film, add to the adhesive or add to the transparent

layer) and a reasonable expectation of success for each when armed with the teachings of Rogers.

Regarding claims 19-20, Higashio specifically teaches the invention relating to the manufacture of LCD (i.e. an image viewing display) ([0001]). The examiner recognizes the polarizing film laminate produced by Higashio as an optical film due to it being a film and possessing optical properties for use in a the manufacture of LCD systems.

Regarding claims 21 and 22, such is merely referring to the operating conditions for the automated performance of claim 1. As set forth above the amount of adhesive (i.e. thickness) was known and such a thickness which would have merely been the result of both the transport velocity and supply quantity. Choosing arbitrary speeds/quantities to achieve such a thickness is therefore obvious. It would have been an obvious choice for the operator to choose speeds which achieve such a thickness and to do so in a way that maximizes operating efficiency (i.e. speed) without sacrificing quality. Also, merely providing a broad automatic means for the purpose of carrying out a known method is a matter of obviousness (In re Venner, 262 F.2d 91, 95, 120 USPQ 193, 194, CCPA 1958).

Regarding claim 23, Rogers (the provider of the aqueous solution) does not explicitly state applying the solution to the adhering surface in a time of less than 30sec from the supply thereof. Rogers does indicate, however, that it is necessary to have the aqueous solution present at the bonding interface to ensure uniform bonding (column 4, lines 40-45) and further indicates that if the surface is allowed to dry than more aqueous

solution should be added before bonding (column 3, lines 1-19). Given the recognized importance of the wetness of the bonding interface at the time of adhesion as set forth by Rogers it would have clearly motivated an ordinary skilled artisan to perform bonding immediately (or as soon as possible) after adding the wetting solution so as to fully realize its ability to provide uniform contact because increased time would have resulted in evaporation and drying of the surface which would have negated the advantageous properties.

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Higashio et al. (US 2003/0072078 A1) and Rogers (US 2,263,249), as applied to claim 1 above, in view of either Applicant's admitted prior art or Shuichi et al. (JP 7198945).

Regarding claim 5, the method of claim 1 is taught as seen above; however, the prior art of reference fails to teach the PVA based adhesive having an acetoacetyl group.

Applicant's admitted prior art discloses it was known in the art (through JP 7198945) that PVA based adhesives having an acetoacetyl group and a cross-linking agent were known (specification [0007]). Alternatively the same teachings can be found in Shuichi et al. (abstract).

It would have been obvious to one having ordinary skill in the art at the time of the invention to have included the PVA based adhesives having an acetoacetyl group and a cross-linking agent because as applicant admits such was known in the art for providing improved heat resistance and water resistance (see above cited).

6. Claims 7 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Higashio et al. (US 2003/0072078 A1) and Rogers (US 2,263,249), as applied to claim 1 above, in view of either Okazaki et al. (US 5,945,209) or general knowledge in the art.

Regarding claims 7 and 12, Higashio fails to explicitly teach the compositions of the applicable cross-linking agent, but does recognize the use of cross-linking agents ([0061]). The silence as to the composition by Higashio is taken to indicate that any cross-linking agent known in the state of the art at the time of the invention would be applicable since there is no exclusion.

Okazaki et al. teaches that cross-linking agents including methylol compounds are known and can be used in combination with a binder (i.e. adhesive) (column 51, line 55 - column 52, line 6).

It would have been obvious to one having ordinary skill in the art at the time of the invention to have utilized a cross-linking agent including methylol groups because, as presented above, Higashio (as presented) is taken to be applicable for use with any known cross-linking agent and Okazaki specifically presents that methylol group containing cross-linking agents were available in the art at the time of the invention and moreover applicable for use with an adhesive. The examiner further contends that it would have also been obvious to one having ordinary skill in the art at the time the invention was made to use a cross-linking agent containing methylol compounds, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin,* 125 USPQ 416.

7. Claims 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Higashio et al. (US 2003/0072078 A1) and Rogers (US 2,263,249), as applied above, and further optionally in view of Kanter (US 4,737,410).

Regarding claims 24-26, Higashio specifically recognizes the use of PVOH-based adhesives ([0054]). It is common in the art of adhesives to use a solvent and an ordinary skilled artisan would have been motivated to do in for the purpose of increasing coatability as evidenced by Kanter (column 10, lines 20-22) whereby it was provided that solvent can be added to tailor the viscosity of an adhesive in order to dictate its coatability. The amount of adhesive is merely a function of the coatability and therefore obvious in view of its function as a result effective variable. Also, Rogers provides a 10% solution of PVOH in water to facilitate the bonding of a light polarizer to another substrate (column 2, lines 1-15). Given the fact that dilute adhesive solutions in water (as the solvent) were known to be useful in bonding applications for light polarizers it would have been obvious to utilize such with the present invention. It would have therefore been obvious to include the specific use of 0.5-2% adhesive solutions since it has been held that where the general conditions of a claim are disclosed in the prior art (i.e. using heavily diluted adhesive solutions), discovering the optimum or workable ranges (i.e. differing dilutions) involves only routine skill in the art. (*In re Aller,* 105 USPQ 233). Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or

workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). Applicants can rebut a *prima facie* case of obviousness based on overlapping ranges by showing the criticality of the claimed range. "The law is replete with cases in which the difference between the claimed invention and the prior art is some range or other variable within the claims. . . . In such a situation, the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range." *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). See **MPEP § 716.02 - § 716.02(g)** for a discussion of criticality and unexpected results.

Response to Arguments

Applicant's arguments filed June 24th, 2008 have been fully considered but they are not persuasive.

The applicant argues there is no continuous adhering the reference.

The examiner first notes that their also no mention of a pause during the adhesion process of Higashio and therefore unless otherwise directed by the prior art to pause there would have no reason not to use a continuous process. Secondly it noted that aside from the aqueous solution, which is supplied by Rogers, the method is substantially identical and the courts have upheld in the past that merely requiring a process to be continuous has been a matter of obviousness (In re Dilnot, 319 F.2d 188, 138 USPQ 248, CCPA 1963).

The applicant argues Rogers would not have provided further insight into arriving at the present invention.

The examiner disagrees and first notes that both are from substantially the same field of endeavor, bonding light polarizers to other substrates. Even though the substrates are different Rogers provides a useful feature that would have been an advantageous feature to incorporate into the method of Higashio. The teaching that an aqueous solution can be supplied at the interface between a polarizer and another substrate in order to facilitate uniform contact would have been recognizably beneficial towards ensuring strong uniform bonding with the method of Higashio (as a result of uniform contact) and therefore been an obvious incorporation.

The applicant argues the particulars of the adhesive thickness over the prior art.

The examiner notes first that as originally supplied the mere optimization of ranges has been held to be an obvious matter absent a showing of unexpected results to show the range is critical. "The law is replete with cases in which the difference between the claimed invention and the prior art is some range or other variable within the claims. . . . In such a situation, the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range." *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). See MPEP § 716.02 - § 716.02(g) for a discussion of criticality and unexpected results. Also, it is brought to the applicant's attention that Higashio says the thickness ranges are in general 1-500um indicating clearly other ranges are suitable and such is clearly an optimizable variable that can be tailored as desired. In assessing

such a variable it would have therefore been an obvious matter to optimize the thickness of the adhesive layer for the purpose of balancing both adhesion requirements and cost considerations absent a showing of unexpected results for such a range. Also, note that the currently amended claim is fundamentally different than previously in lieu of the amendments (for example the removal of the aqueous liquid requiring no adhesives).

The applicant argues the presence of a crosslinking agent in the aqueous solution over the prior art.

The examiner submits that the argument above was indicating that the invention of Higashio and Rogers utilizes an adhesive/crosslinking agent component and a separate aqueous solution for ensuring uniform contact. The examiner was presenting the case the importance of the crosslinking agent was to help crosslink the adhesive and it would have only been necessary to mate the adhesive and crosslinker at the time of curing. It would have been merely a design choice to include to the crosslinker in either of the separated adhesive or aqueous solutions because they were both married at the time of bonding and would produce the same resultant crosslinking.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL N. ORLANDO whose telephone number is (571)270-5038. The examiner can normally be reached on Monday-Friday, 7:30am-5:00pm, alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Philip C. Tucker can be reached on (571) 272-1095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MO

/Philip C Tucker/

Supervisory Patent Examiner, Art Unit 1791